5. Synaptura Selheimi, *n. sp.*

D. + C. + A. 155. P. 6. L. lat. 81.

Height of body one third of the total length, eyes small, nearly on the same plane, and nearly two diameters apart. Scales small, strongly ciliated or toothed on both sides; vertical fins low, lengthening gradually to the tail, which is rather pointed; ventral fins small, opposite, the right one longest; pectoral fins very small, the right one longest. Colour brown mottled all over with black.

Several specimens averaging four inches in length.

This is the first instance I have come across in this country of a fresh water sole. Both this and the last described Fish—*Aristeus cavifrons*—were captured by a very small hook baited with a fragment of a blade of grass.

6. Neosilurus Hyrtlii, Steind.

Proc. Linn. Soc., N. S. Wales, Vol. 6, p. 208.

This species seems to be found in most of the rivers of Northern Queensland. The specimen from the Palmer River is only half grown.

7. Chætoëssus Erebi, Richards.

Proc. Linn. Soc., N. S. Wales, Vol. 4, p. 368.

One specimen of small size. It is found all over the North and West Coasts of Australia both in fresh and salt water.

On the Plants of New South Wales.—No. VIII.

By the Rev. Dr. Woolls, D.D., F.L.S., &c.

Class III. Acotyledones.

The only Cryptogams described in the *Flora Australiensis* are the higher Vascular orders, as Mr. Bentham did not think it

advisable, at his advanced age, to enter on the Mosses, Fungi, Lichens, Algæ, and their respective allies. This great work has now been taken up by Baron F. von Mueller, who has already furnished in his *Fragmenta Phytographiæ Australiæ*, lists of all the known lower orders of Cryptogams in Australia. As, therefore, he proceeds in utilizing the labours of those who have preceded him, or in recording the species new to science which are being collected and forwarded to European specialists, the acotyledonous plants of Australia will become better known than they are at present. The orders to which Mr. Bentham confined his attention are—

1. *Lycopodiaceæ.* 2. *Marsiliaceæ.* 3. *Filices.*

Of the Lycopods, *Isoeles* and *Phylloglossum* do not extend to New South Wales, the former occurring in Tasmania and Western Australia, and the latter in Victoria, Tasmania, and West Australia. *Lycopodium laterale* and *L. densum* are found near Sydney and also on the Blue Mountains, but *Selaginolla uliginosa* (which is distinguished from *Lycopodium* by having two kinds of spores as well as a different habit) has a wide range in swampy places throughout the Colony. The same may be said of *Azolla pinnata* and *A. rubra*, (floating plants with branching and rooting leaf-stems) which are common in ponds and lagoons. *Tmesipteris tannensis* has a pendulous habit, and is found for the most part about the caudices of Tree-ferns, whilst *Psilotum triquetrum* may be found in an erect state, or pendulous from the crevices of rocks. There seems to be a difficulty in determining the species of *Marsilea* or Nardoo, for whilst some Botanists reckon ten species, others would reduce them all to one. The fact is, this plant varies very much in the size of the fronds and the length of the stipes, for it may be found growing at the edge of lagoons or marshes with small fronds and stipes, whilst as it occurs farther in the water, it accommodates itself to circumstances and becomes proportionally larger. Mr. Bentham makes three species for New South Wales (*M. quadrifolia*, *M. hirsuta*,

and *M. Drummondii)*, whilst Baron Mueller is inclined to reduce all its numberless forms to *M. quadrifolia*. *Pilulifera globulifera* which is common to the old and new world, has hitherto been found only in Tasmania and West Australia.

In proceeding to the large and beautiful order of the Ferns, it may be remarked, that, with one exception, all the genera found in Australia are represented in other parts of the world, and even with regard to that one *(Platyzoma)*, Mr. Baker describes it as "a genus too nearly allied to *Gleichesia*," whilst Baron Mueller (Frag. Vol. 5, p. 114) reduces it to *G. platyzoma*. Ranging our ferns under the six tribes of the *Flora*, the first *(Ophioglosseæ)* has two species of *Ophiglossum* (one of which, *O. vulgatum*, is common in warm or temperate climates), and one of *Botrychium* (*B. ternatum)* which occurs also in America, Asia, and New Zealand.

The most admired of the second tribe or Marattieæ do not extend so far South as New South Wales; but the climbing *Lygodium* and three spscies of *Schizæa* (one of which *S. dichotoma* spreads over Tropical Asia and Africa) are found here and there throughout the colony, though *S. bifida* and *S. rupestris* are much more common. Of the tribe Osmundeæ, the aquatic fern *Cerytopteris* and the truly Australian *Platyzoma* seem limited to North Australia and Queensland; but four species of *Gleichenia* and one of *Todea (T. barbara)* have a wide range in New South Wales. *T. Fraseri*, which is certainly one of the most delicate and beautiful of Australian Ferns, has been found in a stunted form in a creek near Parramatta. Its favourite habitat, however, is the deep gullies of the Blue Mountains, where it sometimes has an erect caudex and fronds exceeding three feet in length. The fourth tribe, Hymenophylleæ, which is characterised by its thin and almost transparent fronds, is represented by five species of *Trichomanes* and eight of *Hymenophyllum*. Several of these are common to New Zealand and the islands of the Pacific, whilst *H. Tunbridgense* my be regarded as cosmopolitan, for it

occurs in most of the temperate and cooler regions of the Globe. The fifth tribe comprehends the much admired tree ferns, of which one species of *Cyathea* and three of *Alsophila*, vary in height from a few feet to 60 or 70. *Cyathea* is rare, but *Alsophila australis*, *A. Leichhardtiana*, and *A. Cooperi* are plentiful in some parts of the Blue Mountains, Illawarra, and further South. It is difficult to distinguish the species in dried specimens, but as they differ very much in the character of the caudex and the scales, they can readily be determined in living plants. *A. Leichhardtiana* is a much more slender species than *A. australis*, and the veins of the fronds are more forked, whilst *A. Cooperi* is distinguished by the oval scars of the caudex.

Tho sixth tribe, Polypodieæ, is a very large one, and divides itself naturally into those genera which have an indusium and those which have not. Of the first division, *Dicksonia* has 3 species, *Deparia* 1, *Davallia* 2, *Vittaria* 1, *Lindsæa* 4, *Adiantum* 5, *Hypolepis* 1, *Cheilanthes* 1, *Pteris* 9, *Lomaria* 4, *Blechnum* 3, *Doodia* 3, *Asplenium* 13, and *Aspidium* 12. The species of *Dicksonia* are remarkable for their size and beauty, two (*D. antarctica* and *D. Youngiæ*) being Tree-ferns, and one (*D. davallioides*) attaining sometimes the height of five feet and upwards with delicate and membranous fronds. *D. antarctica* flourishes on Mount Tomah and some parts of the Kurrajong. A. Cunningham was the first to notice the fact, that the seeds of the beautiful *Quintinia Sieberi* frequently germinate in the caudices of *D. antarctica*, and that the curious *Fieldia australis* is often seen adhering to the same Tree-fern. *Deparia prolifera* has hitherto been found only at Illawarra, and *Vittaria elongata* seems limited to the Northern parts of the Colony, but the species of the other genera are widely distributed. *Lindsæa trichomanoides* occurs sparingly on the Blue Mountains and is not specifically distinct from the New Zealand plant; whilst *L. incisa*, which approaches *L. microphylla*, has recently been collected at the Clarence River. Of the species of *Adiantum*, *A. æthiopicum*

is the most abundant, and in some of its larger forms (especially that found at the Macleay River by Mr. K. D. Fitzgerald) it resembles the European *A. capillus-veneris*, but the sori are not on the apices of the lobes as in that species. Many Pteridologists doubt whether *Hypolepis tenuifolia* is distinct from *Polypodium punctatum*, and whether *Pteris paradoxa* and *P. rotundifolia* are distinct from *P. falcata*.

The same remark is applicable to the species of *Doodia* which seem to pass insensibly into each other, and also to some species of *Asplenium*, which Baron F. von. Mueller reduces to the European *A. marinum; Asplenium flabellifolium*, *Lomaria discolor* and *L. Patersoni* are sometimes very sportive in their growth and deviate considerably from the typical forms. The tendency to produce bipinnatifid fronds in *L. discolor*, has been noticed not only near Sydney, but beyond the Dividing Range. In the genus *Aspidium*, there is great difficulty with the species *A. decompositum* and *A. tenericaule*, for some forms which have no indusium are referred to these plants. Besides the ordinary forms of *A. decompositum* (of which *A. tenerum* seems only a variety), *A. acuminatum* or *A. glabellum* is also joined with it. This last has a short root and different habit, and, in the opinion of Mr. Bailey, F.L.S. of Brisbane, must be regarded as a distinct species. From specimens procured at the Kurrajong, I am disposed to agree with him, and also that *A. tenericaule* and *Polypodium pallidum* are identical. Mr. Bailey would, likewise, separate from *Aspidium*, under the name of *Polypodium aspidioides*, a fern very similar to *A. acuminatum*, but apparently without indusium. This fern occurs in the northern parts of the colony and in Queensland. There is yet one form remaining for consideration, and that is the fern which Mr. Baker refers to *A. lancilobum*, but which, from the absence of indusia, more closely resembles *Polypodium rufescens*. When Mr. Bentham had before him large numbers of specimens from all parts of Australia, he was led to unite several forms under *A.*

decompositum, but the amalgamation is not in all respects satisfactory.

In the second division of Polypodieæ, we have of *Polypodium* 11 species, of *Nothoclæna* 2, of *Grammitis* 2, of *Acrostichum* 1, and of *Platycerium* 2. Whilst in the former section, *Asplenium trichomanes* is common to Australia and many parts of the old and new World, we have, in the second division, *Grammitis rutifolia* common to the South West of Europe, Chili and New Zealand, and *G. leptophylla* common to the old world and the Andes of the new. From a review of the species of ferns, it seems that of the 200 known to flourish in Australia, New South Wales has about 108; whilst "of the 38 Australian genera, of which 29 are represented in this colony, no less than 29 have a general range over the New and Old World."—(Bentham.)

Botanical Notes on Queensland.—No. I.

By the Rev. J. E. Tenison-Woods, F.G.S., F.L.S., Vice-President of Linnean Society.

In the course of many visits to Queensland during the last four years I have noted several peculiarities in the flora of that colony which will be of interest to botanists generally. Up to this time the labours of collectors have been directed to the discovery of new species, while the range or the abundance of the same has been little noticed. Now that the grand work of describing and cataloguing has been accomplished by the illustrious botanists Bentham and Mueller, humbler laborers may step in to add to the account of knowledge: This is the purpose of the present notes. I have found for instance that the spread of tropical plants south of the tropical line occurs to an extent which is hardly realized by those who have not visited the place. I shall begin to illustrate this by observations made upon the Burnett River, Lat. about 25°. My travels extended to about